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ABSTRACT

The world is growing technologically at a rapid pace and people's understanding of these new technological advances and their effects upon the world and its various populations and environments must keep up the pace. Technological advances bring with them ever greater potential problems for humanity and for the world environment. The complications brought about by technological advances are subtle and hard to understand. The goal of this book is to introduce a simple and understandable method for analyzing these overwhelmingly numerous and complex considerations that governments, activists, industry, and citizens can easily put into practice. Chapters include: (1) "The Specialist," which discusses the value of generalized understanding of problems; (2) "The Couch Potato," which discusses the dangers of laziness and apathy; (3) "The Ozone Layer," which provides an example of the interaction of laziness and over specialization in the context of an environmental problem; (4) "Social Costs" (costs incurred when one person or entity negatively affects another without compensating that person or entity for losses which result from their actions); (5) "The Method, In Brief" (a six step method for analyzing proposed changes and calculating possible effects using a computer); and (6) "Conclusions." (CW)

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Blueprint for a Better World

by

David Richards

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1st EDITION

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David B. Richards

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1st edition
July 25, 1990

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TABLE OF CONTENTS

Preface: 1

Introduction: 2
The Goals of this Book

Chapter One: 6
The Specialist

Chapter Two: 11
The Couch Potato

Chapter Three: 15
The Ozone Layer

Chapter Four: 19
Social Costs

Chapter Five: 23
The Method, In Brief

Chapter Six: 33
Conclusions

Appendices: 37
I. How to Contribute Ideas and/or Expertise, or Request Analyses
II. List of Analyses Available
III. List of Analyses in Progress

Forms: A: To contribute ideas
B: To be on our staff of experts

PREFACE

I need help. I am concerned about our planet and the shape it's in. I see that there are a lot of concerned, bright people out there who are trying to help. They are very busy, and they work very hard, but no one seems to be reversing the rate of the decay of our planet to a rate of improvement. There is a lot of overlap in their activities, and a lot of communication barriers in place, and it seems to me no small amount of inefficiency in their efforts. These bright and capable people do not seem to be able to establish enough momentum to significantly change the rate of destruction to our environment. Misinformation and disinformation seem to hamper their progress. They lack vision in some cases, due to too specific a focus. They lack, most of all, the Big Picture.

Don't get me wrong. I do not have the Big Picture either, but I do recognize that before long, we must all consolidate our efforts, or we will continue to lose ground in our efforts to improve life in our world. This book is intended not only to stimulate thinking in that direction but also to provide an opportunity to do just that.

Introduction

GOALS OF THIS BOOK

To talk about progress, change and technology in the same sentence is much like talking about the weather. As Mark Twain once said, "Everybody talks about the weather, but nobody does anything about it." Among the industrialized nations today, everybody talks about progress, change and technology--and how they negatively affect us all--and nobody does anything about them. This is because so many people do not really understand progress and the nature of change. Our world is growing technologically at a rapid pace and people's understanding of these new technological advances and their effects upon the world and its various populations and environments must keep up with this pace, because these technological advances bring with them ever greater potential problems for mankind and for all of the world environment.

The complications brought about by new technology are becoming more subtle and harder to understand. It is a truism, and it is becoming trite to say it, but it must be said, and often: With each technological advance a large number of new thoughts and concepts arise, which have to be

digested properly in order to formulate efficient decisions. The goal of this book is to introduce a simple and

understandable method for analyzing these overwhelmingly numerous and complex considerations that governments, activist organizations of all kinds, private industrial corporations as well as average citizens can easily put into practice. As a corrollary to this goal, this method might be used to facilitate communication and understanding between these groups, thus eliminating characteristic overlaps and rivalries.

Additionally, this book is intended to solicit from all individuals who should read it their participation in the dynamic process of bringing these goals to life. In your role as reader, your thoughts are important. Your ideas and ideals will be a necessary ingredient in the method of analysis and the decision-making process presented in these few pages. As you read this book, I hope you will feel included; this is a game all can play on equal footing. I hope you will look upon this book and me its author as a referee in a very exciting competition, a game, a treasure hunt for truth and understanding. As you read this book, you will have questions, ideas and suggestions. Write them down in the book as you go along. I believe you will discover this method is simple to participate in.

I am by no means an expert in any particular field. I am merely an individual with a vision of how we can build a more comfortable world by learning to cope better with the effects of technology through more accurate and timely information. I am just a philosopher of sorts, turning over

stones, searching for ways to improve the quality of life on our planet. I am never certain about anything, because there is so much to consider for even the smallest decision, but the more I think about things, the more I realize that in order to continue to live comfortably on this planet for any length of time will require to pool our resources and talents. My talent is having ideas and organizing problem-solving efforts; yours may be the same, or that of detailed analysis--or both. If so, I hope you will join me in my desire to develop and apply this method in the search for the truth, whatever it may be. Truth is elusive, but we must continue to search for truth and to strive for greater understanding of our world and how to be more responsible in our treatment of it.

I have worked for many years in the business world, as an engineer, on diverse projects which required detailed planning and the integration of many skills, talents and ideas from many different disciplines such as chemical, electrical and mechanical engineering, as well as marketing, accounting, human resources and business management. I have seen many products come into being, and become competitive and successful in the market, because of the competent use of integration techniques to form these diverse groups of individuals into organized teams. Also, in my personal and social life, I have enjoyed meeting many different kinds of

people, from the oppressed poor to wealthy entrepreneurs. I feel that we as the human race have the potential as well as

the obligation to develop better interactive skills so that as a society we can consider all possible ramifications when we make decisions or face changes. I feel that the facts and talent for developing these interactive skills are "out there," just waiting to be discovered. I cannot find them all on my own; I could not even try to co-ordinate them all myself if I were to find them. It would be too great a task. But I know that with your help, this vision can be fulfilled.

It may seem to some that in writing this book I am trying to supersede the efforts of individuals and activist groups who are presently working to improve the environment, or of corporations and government agencies who are already trying to find ways to eliminate waste, clean up the air, and other such projects. These are all highly commendable activities, not to be discouraged by any means. But through this book I am hoping to aid them in doing a more efficient job--to work together better and to understand the overall needs of all people; to understand the Big Picture. For, only by understanding the Big Picture, by fulfilling the real needs of others, will we be able to build a better life for ourselves in the long run.

Chapter One

THE SPECIALIST

There are several problems--or, rather, barriers to real communication--which keep people from being able to see the Big Picture, and which thus lead to faulty decision-making. Two of these are fairly easily overcome, once the problem is stated. The first of these is the problem of specialization.

For many years, people have been encouraged to become specialists--people with narrow fields of vision. For generations we have been led to believe that specialization is important in improving efficiency. The thinking has been that since nobody can know all there is to know about everything, we each should settle for knowing a lot about one little facet of life. The ideal is to "carve out a niche" for oneself. Everywhere in the industrialized world the notion of the specialist is honored. It is a notion fostered by the universities and other institutions of learning to the extent that it is quite difficult for a person to obtain a degree in "Liberal Studies" without a lot of extra hard work and sometimes even special permission. And with such a degree, a person will have an understanding of, say, literature, politics and anthropology, but not of

business or engineering. So he still ends up being a specialist.

We have lost the notion of the generalist. It is true up to a point that specialization improves efficiency, but without a broad understanding of the world around us, we each can be little more than a box of specific information, incapable of making connections to a wider world, or of making decisions concerning the overlapping complexities of our society, environment and technological community, or even of perceiving the complexities in the first place.

We also have become a nation of dependent individuals. We all depend too much on others; consequently we have lost much of our ability to function as individuals. We waste a lot of time and money trying to find and pay others to do the simplest things for us. It is not uncommon to find a young couple who chooses to pay a tax accountant to do their simple taxes (they have no house or children--a simple 1040A tax form is all they require) rather than just do the job themselves. A person of moderate intelligence can learn all he or she needs to know about paying taxes in fifteen minutes with an experienced do-it-yourself taxpayer. The time spent trying to find a competent tax accountant, and communicate with adequately with him or her, plus the fifty or so dollars fee, could be spent on something more pleasant and useful! And yet so many young people have been brainwashed into thinking that taxes must be done by a specialist!

Consider our relationships with others not in your general area of expertise. A psychiatrist doesn't see things as an engineer does; yet communication and understanding between professionals and specialists and laypeople is absolutely necessary if we are to advance our understanding of the truths of the "Big Picture". If an engineer is having emotional or psychological problems, and seeks help from a psychiatrist, the psychiatrist must be able to understand what the engineer understands in a general way, to visualize what the engineer is going through, and to suggest solutions. A psychiatrist must understand the engineer's thought processes in order to find where his problems lie. Though the psychiatrist is a specialist, his ability to help the engineer with his problems may depend on how effectively he can step out of his own world and into the world of the engineer, if only for a short time.

On the other hand, take a situation in which an engineer, a designer of robots, is faced with trying to understand what his customer wants. His customer has only a very general idea of a robot and what it can do; he has no idea of the specific engineering capabilities required to produce such a machine. So he says something general like "I want a robot with arms and legs that responds to voice commands." The engineer, in order to complete the order and satisfy what his customer wants, must be able to understand the person who is making the requirements. The engineer is

going to have to infer certain subtle requirements by interpreting the person's attitudes; he is also going to have to know some specifics, such as how the robot will eventually be used, to discover what exactly the person means. The person may visualize in his head a very basic concept of a robot to perform a very simple task. If the engineer is not reading him properly, he may include all types of interesting concepts that project his own creativity, and which do not necessarily satisfy the customer's requirements.

Without a general understanding of each other's worlds and points of view, we can easily get lost and miscommunicate. It happens all the time in all sorts of everyday situations. The more the technology increases, and the more involved with each other we all are, the more the chances of miscommunication multiply. This really is a shrinking planet--what one person does on one side of the world can truly affect someone on the other side. For this reason, we need to find ways to integrate our thinking and actions so we can build a more harmonious future.

In the "Big Picture", some large companies appear to be making a trend toward becoming less specialized because of the recent tendencies on the part of big businesses to acquire diverse product lines. It is now not uncommon to find food companies who also produce industrial chemicals, railroad companies who own trucking lines, and tobacco companies who also own bakeries. This appearance of

diversity has little to do with what I am talking about--the use of general knowledge and broader considerations in making decisions. In these companies, it is still business as usual: the managers are still looking for bottom line dollar figures and it is their primary goal to balance the budget and produce a profit. More and more, it will be up to the individuals doing the actual work to prove to managers what is the best plan of action. And it is right here where the problem lies. These people, the ordinary workers, are not working on all the products of the company. They are only working on one or a few specific types of products, so their view is also too narrow. "Crosstraining", that is, training a person to do several different kinds of jobs, to produce several different kinds of products, is an idea which is talked about from time to time; it is another one of those ideas which seems sensible but does not get put into practice. Specialization is still the way big business does its business.

The picture presented here is one of almost hopeless compartmentalization of our society. Everyone has his own little job to do, his own little life to live. We are all very busy just maintaining our "niches". No wonder things are out of balance.

Chapter Two

THE COUCH POTATO

Another problem, or barrier to communication, is that of taking someone else's word for things. This is what I call the Couch Potato Syndrome. The willingness to take someone else's word for things, or laziness about experiencing things first-hand, and holding on to the belief that second-hand information has about the same value as first-hand information, is another problem we have which results in faulty decision-making. We have been conditioned to believe we must have an answer to all questions. Therefore we are hurried in our formulation of answers and we don't spend enough time developing our understanding of the real problem, and becoming personally involved in the subject matter.

For example, let us look at our attempts to make decisions concerning the poor in other countries. We must understand that all the information we receive--from books, newspapers and magazines, and even from leaders and the media from these countries--is going to be biased in one way or another, in support of various perspectives. The media in our country have a product to sell, so the producers of printed and video news sensationalize every situation. They

glamorize or sentimentalize the poor to attract an audience. The leaders of the countries seeking our aid are vying for political power and of course desire everything they can get for their people. They will do anything to convince others of their ideas. So, most of the information that reaches us (seated on our comfortable couches at home) is distorted in some way. The only way for us to really understand the needs of the people, or the majority of them, is to go and live with them, not just for a week-end tour, but really live among them--take several months, or a year and become part of their community. It is true that we are not going to be able to understand the whole world in this way, but if there are certain things we really are interested in and find very important, then this is the only way to truly understand them.

Gaining understanding of a situation in this depth is the only way that we can make truly intelligent and informed decisions. Living with the "natives" for several months or years may still not give us a true understanding of their situation, but we need to have this personal experience in order to get a clear understanding of what the needs and desires of a particular people are. We must get out of our narrow ruts and see things for ourselves. We must get out and experience more of life--let's not be couch potatoes!

We also tend to accept anything as fact that comes from someone who has previously won our confidence or someone who has social, political, or academic standing--or who is a

sports hero. It is important to remember that no matter how much status people have, they are all human and they all make mistakes. In fact, often the more status people obtain, the more over-confident--then lazy--they become, and the more mistakes they make.

Laziness is also the reason that people so carelessly place their trust in others in the first place without trying to determine the truth for themselves. Learning from others' experiences is fine, and listening to advice is admirable, but if a person wishes to be an individual rather than a pawn, he or she must analyze information and advice and determine for himself or herself whether it is correct before assimilating it.

Another form of laziness found in current planning strategies is that of using the past to interpret and build our present realities upon. That pattern of thinking was fine when the pace of life and change were slower. But now we are effecting change in our world so fast and drastically that in some cases the recent past only barely contains any relationship to the present. Besides, the past carries along with it many prejudices and unresolved problems, which are an increased burden and have little relevance to the present. So, let's try to set aside some of this history and learn to depend less on how things have worked out in the past. Let's look at what our problems are now, and look toward solutions based on all relevant experiences and not

just rationalize solutions based on vaguely similar problems in the past.

To illustrate what I mean, let's look at the problem of air pollution. Some cities have pollution control standards. "Acceptable levels of pollution," they're called. I think this is ridiculous. Why should we accept an arbitrary standard level for pollution? Why should some specific amount of pollution be accepted as "good"? Why shouldn't we decide that NO pollution is the acceptable standard, and aim for that? We could then decide how much money, time and effort we could expend to bring this about. Then, if we should fall short of our goal, we will have failed to provide a healthy environment for our people for lack of time or money, and not because of poor planning or because we foolishly decide to accept a second-rate environment. By aiming for perfection we eliminate a lot of extraneous effort and confusion in trying to accomplish these interim steps. We also develop a clear procedure for building a better world. After all, can you pick a percentage of physical impairment or brain damage that you would find acceptable for yourself or your children?

Chapter Three

THE OZONE LAYER

An example of how my theories of "the Specialist" and the "Couch Potato" work together to produce misconceptions and faulty decision-making techniques is the current concern over the depletion of Ozone Layer.

Most of the information expressed by the press and other news media indicates that the addition of fluorcarbons to the atmosphere and the destruction of the rain forests in Brazil and Hawaii are the direct causes of the destruction of the ozone layer and the only things we should consider. This information changes on a daily basis; some of it is in the form of wild guesses, as specialists talk to news gatherers and each is trapped in his or her own small view of things--and neither succeeds in getting very much truth conveyed.

Some scientists see that there is ozone produced by vegetation on earth, and they directly conclude that the ozone developed in these trees goes up to the ozone layer where it is useful in eliminating ultra violet rays. From what I understand from reading through scientific journals and interviewing scientist friends on the subject of the ozone layer, this is not exactly the case. While it is true

that the ozone developed by the vegetation on earth is the same as that in the stratosphere, it is not likely that the ozone produced by trees on the earth's surface reaches the stratosphere in substantial amounts and in time to bolster the ozone layer. It does happen, but not regularly enough to maintain the ozone levels in the stratosphere. Ozone is heavier than the air on the earth's surface, therefore it does not typically rise up into the atmosphere--it stays pretty much where it is, and, in reality, excessive ozone on the earth's surface is detrimental to human health and survival. The Environmental Protection Agency has established limits of maximum ozone concentration in inhabited areas. The vegetation in and around the city of Atlanta produces ozone levels beyond these maximum limits. All these findings simply support what I said last chapter about the "Couch Potato Syndrome". If we accept only what we see on television or read in the popular press, we will get only the "facts" which sell--the sensational ones.

Another perspective for looking at the ozone problem is fluorcarbons. Fluorcarbons do rise and get up into the ozone layer and deplete the ozone. Although no one discusses the magnitude of this problem--exactly how many cans of hairspray can destroy what percentage of the volume of ozone--it is true we need to control this leakage of fluorcarbons by every means possible. But to discuss these causes of depletion of the ozone layer without trying to get the "Big Picture" is to grossly misrepresent and

oversimplify the problem. To help eliminate these oversimplifications, we need to develop a method to track all the causes of ozone depletion and attack the causes that have the most impact on the ozone layer, instead of the band-aid approach of banning the use of hairspray with fluorcarbons--without understanding the big picture.

There are other larger, more important destroyers of the ozone layer. It has been discovered that rocketships blasting through the stratosphere burn up large amounts of ozone. Ozone is oxygen, and upon contact with a large flame, it will explode and in this manner countless volumes of ozone mass are destroyed by the flames generated by rocketships. Also devastating to the ozone layer are the natural lightning storms in the stratosphere. They destroy ozone on a continuous basis, naturally, and we can't do anything about them. But we have to look at other ways to control the destruction of the ozone layer. If we don't want to stop sending rockets into space, and stop using fluorcarbons, perhaps we could put a satellite into orbit which manufactures ozone and could be directed to any chosen area of the stratosphere. This would be costly, but compared to the results--that our planet would continue to have a comfortable and liveable climate--it would be a small cost to pay.

The effects of these man-made causes of the destruction of the ozone layer can be assigned dollar values, according to the method I describe in this book. The cost of a rocket

launch could be increased to include money to repair the damage to the environment. This additional cost could be analyzed fairly precisely and diverted to the construction of ozone manufacturing plants and other ozone-producing projects. The same is true for fluorocarbons. The percentage of fluorcarbons that are sent into the atmosphere by manufacturers or made possible by these manufacturers would be calculated according to the amount of ozone actually depleted, and the amount of money needed to replenish the ozone could then be determined. This way, it would not matter how much ozone were destroyed; it would be replaced by these manufacturers paying directly for the destruction their products do.

In other words, I see this ozone layer depletion problem as one that can be completely resolved. The solution will require hard work--a pooling of talent to bring about a greater understanding. We will all have to get out of our comfortable little "niches" and seek the broader view; we will have to abandon our couches now and then and join efforts with others. But I feel this is true of all problems--if enough thought and time and cooperation are put into solving these problems, we can improve and maintain our environment. And why stop here? Why not shoot for the optimum environment? It seems to me that we have nothing to lose, and everything to gain.

Chapter Four:

SOCIAL COSTS

Until this point, it may seem that this book does not take into consideration those situations in our home environment--this planet earth--which are aesthetic in nature. But as you discover my method, and learn how this book works, you will see that it can provide information that will demonstrate how aesthetic considerations can be measured in economic terms, and thus be better understood to others with different aesthetic tastes. What I am talking about here are social costs.

Social costs are those costs that are incurred when one person or entity negatively affects another without compensating that person or entity for losses which result from their actions. For example, people who pollute the air generate social cost for those who do not pollute the air. The polluters have cost the non-polluters some clean air; they have violated the basic human right to breathe clean air. The polluters--not the non-polluters--should pay to remove the unwanted pollution since they caused it. In addition to covering obvious costs in terms of the health of the human race, and the safety and health of other creatures, aesthetic and historical values of any proposed action or change must be added into probable costs by the

concerned individuals--those proposing the change, and those most likely to be affected by it.

Much of this kind of value will be reflected in our analysis because the lowest common denominator in the world today is money. Any change in the environment, no matter how apparently insignificant, usually affects someone's pocketbook somewhere in the world. For example, let us examine what happens when a certain species of animal starts to disappear--a red squirrel. We might start off with just a compassionate concern--it makes many people sad when a species of animal becomes extinct. However, it may also have an impact on other animals in the area, and also on the plant life, if the red squirrel in question is an important balancing factor in the food chain of its environment. And finally, the little fellow's disappearance may affect the pocketbooks of local innkeepers, restauranteurs and other concessionaires. If his presence stimulates tourist interest in the area, his absence could cause tourists to lose interest in coming there. This type of thing happens all the time: when the fish disappear from a popular fishing stream, the fishermen go elsewhere, leaving the local economy, once dependent upon the trade of the fishermen, high and dry. Local governments have taken to being sure their local streams are regularly stocked with attractive trophy-size trout!

There are also indirect effects of a change in this squirrel population. Emotional unrest has a value. It is

possible that someday, after studies and the collection of data, we may be able to capture part of this value and project quantitative results. I am not implying that these results are anything like the somewhat arbitrary values determined presently in the U.S. court system, but maybe an average dollar value that people would be willing to exchange for the protection of these squirrels which may face extinction if a certain course of action is decided upon. One source of this information could be the consideration of the time and money spent by activists on this concern.

So, we've proposed that people should pay social costs for their products or for any course of action they may initiate which would change an environment and cause harm or other dislocation or inconvenience to people in the area affected by the change. But, deciding upon an amount of fair restitution is only the first step. Then we have to figure out how to collect the monies, and what to do with them once they are collected. A fund or agency or commission could be established, administered by local, state, or federal government, that would then disperse monies to animal breeders, ozone producing plants, waste disposal sites--whatever agency would be appropriate to solve the problem created.

The method outlined in the next chapters of this book will make it possible to assess these costs relative to the type of change proposed. This type of planning will of

course cause certain products or processes to be very expensive, which costs will be passed on to the consumer. But as a result of this kind of careful planning, manufacturers will be able to develop other materials to build their products with or develop new products, or find less expensive ways to do the same thing.

Much of this type of analysis is done to a large extent already; what I am proposing is that it be done on a wider scale and in more detail, with greater attention to what others in related fields are doing. In other words, with more attention to the "Big Picture." This is what this method is all about.

Chapter Five

THE METHOD, IN BRIEF

From our investigations into the "pretend" example of the hapless Red Squirrel in the last chapter, we saw that any change in the environment can have many unforeseen ramifications for many people. Trying to anticipate all possible effects for any proposed change can be a very wearying exercise for the average group of planners. The beauty of this method I describe here, is that for any proposed change (cause), it will calculate all the possible effects--through the miracle of computers. Even if the request is for analysis of only specific effects, we will still calculate all the possible effects, in order to trace any possible overlappings and interconnectings of different subsequent effects. It is vital that these studies be this detailed and complete, because we are going to use information gained from each analysis to answer many other requests. We want to be as thorough as possible so we don't have to reinvent the wheel with every study, or, more tedious still, analyze the same problem twice. (The goal, of course, is to find one super chain of cause and effect relationships that develops other subsequent checks to a point at which we wouldn't have to redo any analysis). The main concern in all this is to calculate results of any

proposed action or request and analyze the magnitude of the effect caused by an implemented action or a proposed action in such a way as to avoid costly mistakes.

I will use as an example of how this method works a step-by-step analysis of a municipal solid waste disposal site--a garbage dump. Since all things in the world that are manufactured and built eventually have to be disposed of, a dump is a fairly basic part of the infrastructure that supports our whole social and economic system. And although dumps are usually hidden away from our everyday lives, the dump site is where a lot of pollution can be controlled. And a garbage dump is also a point of contention for some of the other kinds of costs we are talking about--social and aesthetic concerns, as well as economic concerns, crop up when people start discussing solid waste disposal.

The first step of my method is to list all the possible types of changes to the environment which the dump presently affects, either negative or positive. A fairly long list can be generated after only a few minutes of brainstorming. At the present time, we know dumps affect air pollution, they change river courses, they pollute water tables; we also know that recycling at dumps affects the depletion of resources--that is to say, recycled items, cans, bottles, newspapers, etc., can be used to offset the depletion of trees, aluminum, and silicon. So, we have a list which we can use to begin our analysis.

The second step in this method is to assign specific circumstances and magnitudes to each possible type of effect, such as if a dump was designed to eliminate all air pollution, then we could discover the magnitude of change in the overall pollution of air as affected by this particular garbage dump. Additionally, if there is a dump that was originally recycling 60% of its product, then we decided that we wanted it to recycle 100% of its product, we could analyze both situations on the basis of economics to find out if the dump should receive an income from this extra recycling effort--from the fund consisting of the money collected from polluters, mentioned in Chapter Four. The dump will also create profits from the sale of the additional 40% of recycled product. The fund should also pay the dump for the positive environmental effect of reducing the depletion of natural resources. As you can see, there is an almost infinite number of relationships between these kinds of considerations, and through our studies we're going to try to track these to the best of our ability with the amount of money and time available. Thus far, I have been describing FIRST-LEVEL EFFECTS.

The third step in the process is to code all the specific circumstances that I have just described as they can be located and applied to their effects. First, I will start with the list that we have already put together, and using Alpha-numeric code, I will assign one number to each circumstance, or possible change--which, as mentioned

before, are the changes in quantities of recycled materials and the reduction in the pollution of air, the water table, and so forth.

The fourth step is to list all the possible effects of each of these changes, and this will be the SECOND LEVEL. These effects will be listed as the pollution of the air through the burning of garbage; the THIRD LEVEL EFFECT would be that of greater difficulty for humans to breathe on the earth's surface. This will continue on from level to level in the same manner. The second level may be that because humans cannot breathe as well they cannot perform certain tasks as effectively and so on.

The fifth step to this method is to indicate under the description of each effect in this ongoing process the codes of their repercussions, or their next level effects. These repercussions will be treated in the same manner, identifying all repercussions on a particular level, and then moving on to the next step. Some repercussions will be separate, while other repercussions will form links or even crossover chains with other chains of repercussions caused by other problems or causes.

An example of cross-over effects from one major topic of analysis to another might be that of the death of a certain species of fish when we begin to pollute a particular stream to the point at which the viability of life in this stream begins to decrease. The original problem is pollution of the stream, and the other problem

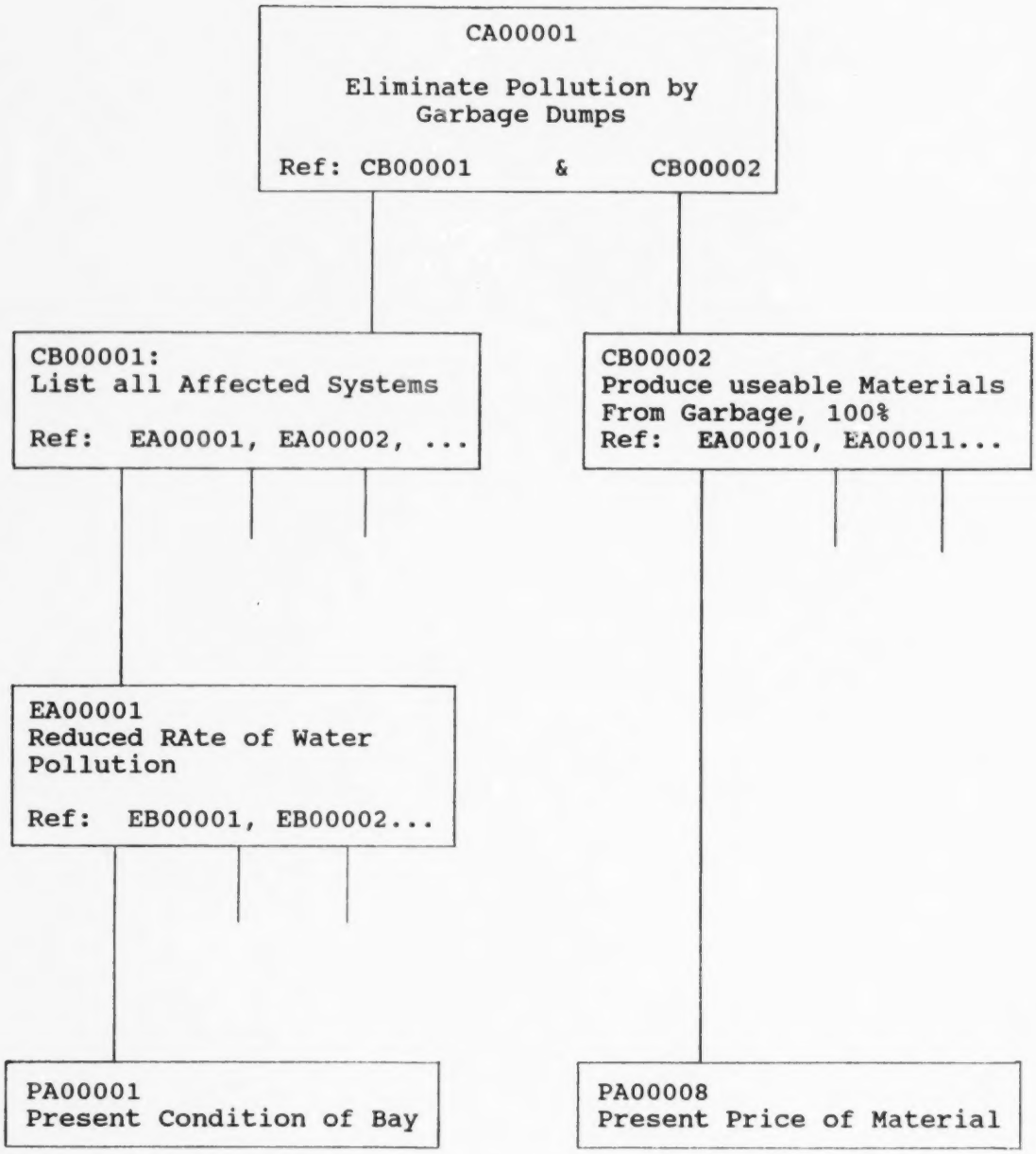
found through analysis might be that of over-fishing, both of which problems will eventually destroy this particular fish population and thus have the same effect or, in this case, compounding effects.

The sixth step in this method is to take each such effect or repercussion and include such considerations as relative time projections for estimating the beginning and ending of a particular rate of decay in a specific eco-system or whatever we're studying, and the description of the effects or repercussions, with their positive and negative effects caused by particular actions--how they form effect "loops", and how they affect people and things in other areas, or crossover effects, as we mentioned earlier. The more accurate this information becomes, the better the individuals involved will be able to project the real results of their actions.

This method can analyze cost savings or costs incurred by the specific changes. It can also forecast what or who will be affected. In this method we will also assign degrees of faith in these results, due to some level of inadequacy or faith in the studies or analysis produced. By the use of more funds and more time we can work on these percentages of confidence and put more effort into the project and create higher levels of confidence. This will also indicate what direction and types of analysis we need to take by finding the lower confidence level effects. By using this method, we can create a visual picture and an

accurate idea of what the world would be like if certain steps were taken or what the world will be like in time because of what steps have already been taken. On the next page, there is a change and effect diagram which I hope you will find illustrative.

EXAMPLE OF A CHANGE AND EFFECT ENTRY



If this "change and effect entry" were written out in regular language and printed up on cards, it would look something like this:

CA00001: Eliminate pollution of soil, water and air caused by garbage dumps and produce useable materials from garbage.

Provide garbage dumps that emit zero pollutants and process all materials into useable elements.

Forecast cost to develop and operate these dumps so that these costs can later be compared with the projected benefits calculated from the following procedure. (Ref. text)

Ref. CB00001 and CB00002, etc.

* * *

NOTES:

[List all affected water systems, soil systems and air systems and assign CC00000 codes.]

[Estimate total pollution caused by existing dumps. For an example, we will start with S.F.Bay.]

* * *

CB00001 = SF BAY
Eliminate water pollution from existing dumps, 100%
Ref. EA00001 and EA00002...etc.

CB00002 = SF BAY
Produce useable materials from garbage, 100%
Ref. EA00010, EA00011...etc.

EA00001 SF BAY
Reduce rate of water pollution of Bay by 95%
Present conditions times change in rate of pollution)
(Print out comparisons of present break points--where general transitions are experienced--and projected break points with ref. to time increments)
Ref: EB00001, EB00002, etc.

PA00001 SF BAY (This file will be updated on a regular basis)
Present condition of SF Bay, 1990.
(Chart the limits, tolerances or additional pollution that would effect percentages of break point changes in SF Bay or adjacent environments, such as no. fish, no. plants, or non productive adjacent lands if applicable. Indicate when companies would be asked to stop polluting or charged fee per qty. of pollutants.)

PA00008 S.F. Bay
Present price of all (projected) materials produced by new garbage dumps times (projected) quantities.

At specified time increments (5 years, 10, 20, 30 years), print out.

* * * *

If all goes as planned, this process will be continued until the second to the last link in the chain is the least accurate and the last link will be a wild guess not used in

calculations. The last link will act as an indication of what will have to be studied to extend the projection.

By means of this method of analysis, the information gathered will be constantly refined as new data become available. Of course, and I know I am repeating myself, you are the important ingredient in this process; our most valued source of new information will be from people like you challenging the old information. It is my intention and my hope that this method will become a group effort; I cannot do it by myself.

* * * *

The method just described in the previous few pages is now being put on computer. If it seems complicated, it is--just a bit. However, it is my hope that this method will eventually remove the necessity for people to discover on their own the infinite amount of information necessary to make efficient and informed decisions. At the same time it will allow individuals to question the information from these analyses and contribute their ideas to effect change as they feel so inclined. In other words, this method will provide a quick and easy method for anyone who is interested to join in a conversation with other interested parties when important decisions need to be made--especially those sticky decisions that affect many people in many different ways.

The information from these analyses can be used by corporations, governments, activist groups and individuals in order to make informed policy decisions and laws. With this method everyone will have access to the same unbiased information and will all have equal access for contributing their ideas for consideration.

At this point, I would like to suggest several ways in which analyses produced by this method can be used:

1. To help governments, individuals, businesses, and activists to make long-term projections by better analyzing the cause and effect relationships behind their planned avenues of activity.

2. To analyze the social costs of using specific materials and processes so that everyone can make more informed long-term cost-effective decisions on materials and process selection, and avoid costly mistakes.

3. To determine the real costs of further pollution of the air, water, land, so that polluters can be accurately billed--and made to pay--for oil spills, auto exhaust, radioactive waste and the like.

4. To determine optimal circumstances and determine how to achieve them.

5. To discover undesirable materials and to suggest and encourage replacements for them.

Of course, these are only a few of the many possibilities for this method. I am sure you can think of a few yourself. Here again, if you have any questions to ask or suggestions to offer, please feel free to contact me. Remember, this is a "rough draft"!

All the analyses published will contain an over-all description of the initial problem and its solution, including quantitative estimates on the percentage of confidence of each step of the results and estimates of costs or savings indicated by the solution. In cases involving a potential destruction over time, additional time estimates will be included identifying the basic stages of decay. (All back-up documentation will be available when requested.) All analyses performed will be available to anyone in an effort to encourage greater understanding and communication between all the diverse people in our world. The people requesting these analyses will be kept anonymous even to the analyst if possible in an effort to eliminate as much bias as possible.

I hope I have been successful in explaining how easily and efficiently this method will clarify the decision-making processes we now use--hopefully to create a more positive and humane approach to solving the many problems which now face mankind. If you are not convinced, or if things are not clear, I hope you will simply mark up this book accordingly and mail it back to me, or just write me a letter. I will do everything I can to help.

Chapter Six

CONCLUSIONS

In the United States of America, we live in a democracy. One of the basic tenets of our society is the right to the pursuit of happiness. I believe firmly in this. I do not intend by this book to imply that anyone should be denied the right to pursue his dream; I do not think I have the right to do that.

But I do care about our common environment. Sometimes--in fact, many times--in the history of our society, one person's pursuit of happiness has led to the curtailment of happiness to many people around him. But times are changing. With the human population on our planet growing rapidly with no slowdown in sight, and with the resultant shrinking of the world's resources, the consequences of one person pursuing too much happiness for only himself become more drastic. If, in the pursuit of your dream you infringe upon my right to a comfortable and healthy environment, I feel it is my obligation to tell you; you have the same obligation to tell me if my pursuit of happiness negatively affects you.

In other words, we have reached a point in our development as a species where our various pursuits of happiness have to be more carefully scrutinized. A polluted

river may affect many countries, air pollution affects all countries. Because of the potential danger involved in all our new discoveries, we cannot make a move without affecting many people. I am not implying that we should stop progress, but that we should progress in our abilities to successfully cope with the side effects of this progress and not blindly implement our discoveries without understanding these effects first.

The method described in this booklet will allow everyone an opportunity to argue philosophy with me and facts with the experts. If you take advantage of this opportunity and participate in this dynamic process, together we can come to a better understanding our world and perhaps be instrumental in the development of a more comfortable home for everyone.

Scrutinize the information in this book carefully and voice your objections and disagreements so we can investigate your ideas. I am not presenting iron-clad facts in this book, but only opinions and beliefs. It is up to you to supply me with yours so I can meld them with mine and together we can participate in this dynamic process of methodically approaching greater understanding of our world. Even though we must continually question all the information presented to us, through striving for this greater understanding our decisions will become more and more informed and therefore more efficient and effective.

If you have read this far in this book and find that you don't see this method as a possible answer to some of the problems we have now, then I hope I have at least stimulated your thinking along some new paths. I hope I have interested you in seeing how interrelated we all are, and that there is a definite need to consider The Big Picture, or at least a bigger part of the Big Picture than we normally do, in order to ensure a more comfortable future for ourselves and our off-spring.

APPENDIX I

How to Contribute Your Ideas and Opinions

The easiest way for you to participate in the dynamic process outlined in this book is to mark up your copy, inserting your ideas and opinions--yes, even criticism--as you read it over a second time. Then, simply mail it to me:

David B. Richards/Blueprint For a Better World
P.O. Box. 149
Union City, CA 94587

Your ideas, opinions and criticisms will be used to produce the next edition, which, of course, will be much more informative and enlightening. If your ideas are used, they will be appropriately footnoted and you will receive your copy free.

If you would like an analysis done on a certain topic, fill out the analysis request form (FORM A at the end of this appendix). With a $50.00 minimum fee and the specification of what topic you would like to apply it to, we will send you the next edition. The more money you send in, the further we can take the analysis. We will group your money along with other monies specified for the same topic. If no topic is specified, we will select the topic to apply the money towards.

Through circulating this book we will solicit experts to participate in the analysis on a part-time consultant basis. This way we will not be locked into a specific group of individuals. If you are interested in becoming one of our consultants, please fill out Form B at the back of this book. Interested consultants will be listed by their areas of expertise. When funds are made available, experts will be contacted from the appropriate groups on the list. The experts who demonstrate a desire to participate in a specific analysis will be selected on rotational basis with some consideration to the salary they require and a general (loose) qualitative and quantitative analysis of their previous work.

If experts contribute free analysis in their areas of interest, they will help generate further analysis in those areas. There is an infinite amount of analysis to be done in all fields, so nobody has to worry about running out of work!

The contents of this book and any subsequent analyses are only our beliefs and opinion based on the information available to us at the time. Everything in this book and these analyses can and will be changed--by your contributions and your support.

LIST OF ANALYSES AVAILABLE

LIST OF ANALYSES IN PROGRESS

FORM A: For those who want an Analysis or wish to contribute information

Check one: Contribute information only: _____

Request for analysis _____

Amount enclosed $_____
(Minimum $50.00)

MAIL TO: BLUEPRINT FOR A BETTER WORLD (ROUGH DRAFT)
P.O. BOX 149
UNION CITY, CA 94587

YOUR ADDRESS:

_____

_____

_____

PHONE: (_____)_____ (Work)

(_____)_____ (Home)

Description of topic(s) you wish analyzed:

_____

_____

_____

_____

_____

_____

_____Please contact me for further information.

FORM B: For those who wish to be consultants:

MAIL TO: BLUEPRINT FOR A BETTER WORLD (Rough Draft)

P.O. BOX 149

UNION CITY, CA 94587

YOUR ADDRESS: _____ (name)

_____ (street)

_____ (city, state zip)

PHONE: Work: (_____)_____

Home: (_____)_____

List topics of interest or areas of expertise:

_____

_____

_____

_____

_____

_____

Hourly rate you require: $_____

Number of hours per month you can offer: _____

Comments: _____

_____

_____

Please enclose your résumé. (Academic achievements are not the only criteria used in selection.)